# 17FT015 NUTRACEUTICALS AND HEALTH FOODS

Hours Per Week :

| L | T | P | C |
|---|---|---|---|
| 3 | 1 | - | 4 |

Total Hours :

| L | T | P |
|---|---|---|
| 45 | 15 | - |

xxxx

| WA/RA | SSH/HSH | CS | SA | S | BS |
|---|---|---|---|---|---|
| 15 | 30 | - | 5 | 5 | - |

## Course Description and Objectives:

This course deals with the functional foods and nutraceuticals (FFN) products and their bioavailability and health benefits. The objective of the course is to impart knowledge to students on basics of functional foods and nutraceuticals, their significance, regulatory standards and role in disease prevention.

**Course Outcomes:**

- define functional foods and nutraceuticals
- understand the chemistry and physiological effects of FFN
- understand the role of selected FFN in health promotion and disease prevention and treatment
- discuss the regulations with respect to functional foods and Nutraceuticals

## SKILLS:

- ✓ able to identify the bioactivities of the main functional ingredients and their health benefits, sources and safety issues
- ✓ proficiency in formulation, delivery and regulatory compliance related to FFN products

**UNIT – I**

Introduction to nutraceuticals: definitions, synonymous terms, basis of claims for a compound as a nutraceutical, regulatory issues for nutraceuticals including CODEX.

**UNIT – II**

Concept of angiogenesis and the role of nutraceuticals/functional foods; Nutraceuticals for cardio-vascular diseases, cancer, diabetes, cholesterol management, obesity, joint pain.

**UNIT – III**

Immune enhancement, age-related macular degeneration, endurance performance andmood dis-orders – compounds and their mechanisms of action, dosage levels, contraindications if any etc.

**UNIT – IV**

Manufacturing aspects of selected nutraceuticals such as lycopene, isoflavonoids, prebiotics and probiotics, glucosamine, phytosterols etc.; formulation of functional foods containing nutraceuticals – stability and analytical issues, labelling issues.

**UNIT – V**

Clinical testing of nutraceuticals and health foods; interactions of prescription drugs and nutraceuticals; adverse effects and toxicity of nutraceuticals; nutrigenomics – an introduction and its relation to nutraceuticals.

**TEXT BOOKS:**

1. Brigelius-Flohé, J & Joost HG. 2006. Nutritional Genomics: Impact on Health and Disease.Wiley VCH.

2. Cupp J & Tracy TS. 2003. Dietary Supplements: Toxicology and Clinical Pharmacology. Humana Press.

3. Gibson GR &William CM. 2000. Functional Foods - Concept to Product.

4. Losso JN. 2007.Angi-angiogenic Functional and Medicinal Foods. CRC Press.

**REFERENCE BOOKS:**

1. Neeser JR&German BJ. 2004. Bioprocesses and Biotechnology for Nutraceuticals. Chapman & Hall.

2. Robert EC. 2006. Handbook of Nutraceuticals and Functional Foods. 2nd Ed.Wildman.

3. Shi J.(Ed) 2006. Functional Food Ingredients and Nutraceuticals: Processing Technologies.. CRC

***ACTIVITIES:***

- Isolation of lycopene from tomato and its incorporation in beverages
- To study processing, health effects and stability of various bioactive components in wheatgrass juice